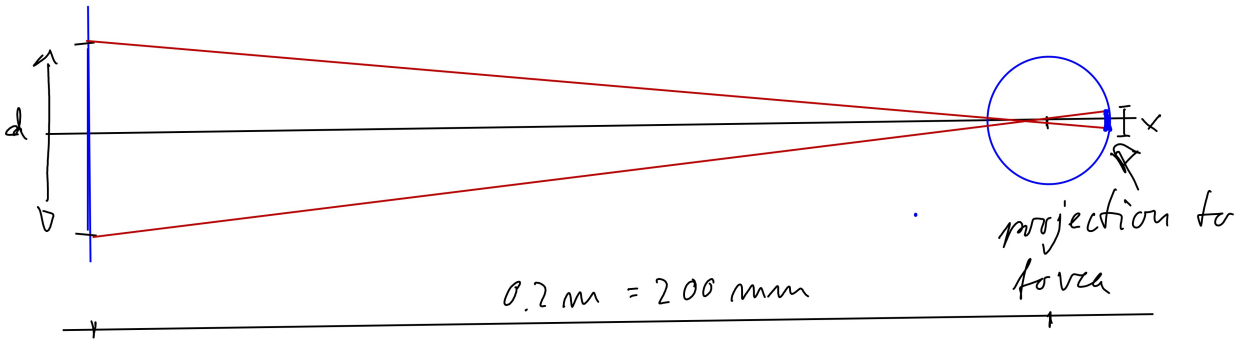
DIP Tutorial 23S, session 1:
Reference solution for Problem 1.4



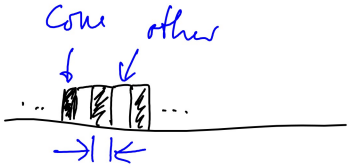
$$\frac{d}{200\text{mm}} = \frac{x}{14\text{mm}} \Rightarrow d = \frac{x}{0{,}07}$$

From problem statement:

Fovea: 1mm^2 with 160 000 cells $\hat{=}$ 400^2 cone cells

$\Rightarrow$ array: 400×400 + intermediate cells, equally distributed

in 1D: On 1mm: 400 cone cells and 400 intermediate cells



$$\sigma = \frac{1\text{mm}}{400+400} = 1{,}25\,\mu\text{m}$$

$$\Rightarrow d < \frac{x}{0{,}07} = \frac{\sigma}{0{,}07} = \frac{1{,}25}{0{,}07}\,\mu\text{m} \approx 18\,\mu\text{m}$$

$\Rightarrow$ Dots of diameter $d < 18\mu$m not visible at a distance of 20 cm.